Announcing winners of first-ever New Mexico Governor’s STEM Challenge

December 9, 2019

LOS ALAMOS, N.M., Dec. 9, 2019—Roughly 600 people convened at Los Lunas High School Saturday, December 7, 2019 for the first-ever New Mexico Governor’s STEM Challenge, a competition testing students’ ability to use science, technology, engineering, and math to solve real-world problems. Led by New Mexico’s Office of the Governor, the Challenge was a collaboration between the Department of Public Education, the Department of Workforce Solutions, Los Alamos National Laboratory, and 18 other STEM employers in the state.

Forty-six student teams from public, private, and charter high schools across the state participated, along with judges from 19 New Mexico STEM employers, plus educators, volunteers, and government officials. Each team was composed of up to 10 students who have made a computer simulation or prototype answering the question posed by Los Alamos National Laboratory, “How can you use science and technology to make the world safer?”

"New Mexico has absolutely unlimited potential," said Gov. Michelle Lujan Grisham. "And this competition is an incredible showcase of the ingenuity and passion of so many bright, talented New Mexicans. I'm thrilled and inspired by the work of these students and grateful for their effort. It's a reminder to all: New Mexico's best and brightest are on the cutting edge of the science and technology advancements that will define our shared future.”

STEM employers provided judges and cash awards capped at $5,000 per winning team of up to 10 members. Each student on a winning team took home $500.

The winners are (in alphabetical order):

Academy for Technology & the Classics, Santa Fe
For: “The Big Blue Bag,” a modified backpack equipped with a water filter and 15-liter, clean-water storage capacity for use in natural disasters
Presenter: N3B

Alta Vista Early College High School, Anthony
For: “Hybrid Concrete--Using Recycled Materials to Build Homes for the Homeless”
Presenter: El Paso Electric

The ASK Academy, Rio Rancho
For: “Accounted4,” a tracking device for locating all students and staff in the event of a school shooting or other evacuation
Presenter: RS21

Belen High School, Belen
For: “Roads to a Safer Environment,” a porous road-surface material made from repurposed waste asphalt and plastic that prevents flash flooding and allows for water catchment
Presenter: Facebook

Bernalillo High School, Bernalillo
For: “Insecticidal Effect of *Capsicum annum* Extract to *Manduca quinquemaculata.*” Recognizing the needs of nearby Pueblo farmers, students developed an organic insecticide from chile peppers that effectively killed destructive hornworms.
Presenter: Pattern Energy

East Mountain High School, Albuquerque
For: “Food of the Future: Algae,” demonstrating how spirulina can be an affordable, widely available dietary supplement in food-scarce areas
Presenter: Presbyterian

Mandela International Magnet School, Santa Fe
For: “Using Object Detection to Make New Mexico’s Arroyos Safe,” a device alerting first responders to a person trapped in an arroyo during a flash-flood
Presenter: Boeing

Monte Del Sol Charter School, Santa Fe
For: “Water Sustainable Agriculture Technology in our School Community,” growing safe, sustainable lettuce for the school kitchen using a combination of hydroponics and aquaponics—and less water—than conventional means
Presenter: Decartes Labs

New Mexico Military Institute, Roswell
For: “Biometric Triage Drone,” which scans a disaster area for injured individuals and performs triage on them, allowing search-and-rescue teams to respond with maximum efficiency
Presenter: Freeport MacMoRan, Inc.

Pecos Connections Academy, Carlsbad
For: “HawkEye: An Aid in Parenting and Healthcare,” a tracking device for caregivers of young children or adults with mental disabilities
Presenter: Meow Wolf

Raton High School, Raton
For: “A.C.T.S: Automated Climate Temperature Sensor,” which monitors conditions inside a greenhouse for efficient food production
Presenter: Urenco

Sandia High School, Albuquerque
For: “Give the Green Light to Traffic Sensing,” a traffic-light system decreasing gridlock by sensing the flow of traffic
Presenter: Sandia National Laboratories

San Jon Municipal School, San Jon
For: “SCHWAP: Spilling Hose Water Accident Preventer,” a waste-preventing automatic shut-off device for garden hoses
Presenter: Deloitte

Santa Fe High School, Santa Fe
For: “Plastic Waste, Replaced,” biodegradable plastic made from cornstarch

Presenter: Chevron

Southwest Aeronautics, Mathematics, and Science (SAMS) Academy, Albuquerque
For: Prosthetic hands
Presenter: Virgin Galactic

Southwest Secondary, Albuquerque
For: “Sol Wind,” a wind turbine that stores energy in solar panels
Presenter: PNM

Taos Academy State Charter School, Taos
For: “UCRD, Ultrasonic Conflagration Reduction Device,” a drone designed to fly over wildfires and shift the air currents around them, reducing the possibility of conflagration
Presenter: Air Force Research Laboratory

Taos High School, Taos
For: “Solar Powered Computer Lab for Taos High School”
Presenter: Los Alamos National Laboratory

Tohatchi High School, Tohatchi
For: “At-Home Cell Phone Tower: The Key to Better Emergency Communication in Tohatchi, New Mexico,” using recycled materials to build a working home cell tower, boosting cell signal and allowing residents of rural communities access to 911
Presenter: Intel

V. Sue Cleveland, Rio Rancho
For: “Combating Teen Vaping Through Propylene Glycol Detection,” an affordable, effective vaping-safety detector
Presenter: Los Alamos National Laboratory

All participating students will also receive varsity letters from their associated schools, per guidelines of the New Mexico Activities Association.

“The STEM Challenge’s team-based approach of applying science, engineering, and technology to make the world safer is a microcosm of the work we do at the Laboratory every day,” said Thom Mason, Director of Los Alamos National Laboratory. “Watching teams made of diverse individuals from across the state keeps me optimistic for the Laboratory’s future workforce.”

Los Alamos National Laboratory provided coordination and support through its Community Partnerships Office, which emphasizes economic development, STEM education, and volunteerism. The LANL Foundation coordinated STEM employer contributions and provided funds for travel and other resources to eligible public-school teams. The Foundation invests in early childhood education, STEM programming, and teacher development.